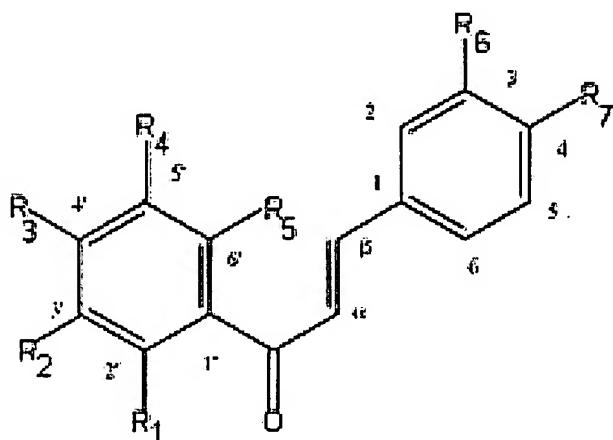


## CLAIMS

What is claimed is:

1. A method for treating bladder or urinary tract cancer in a human or veterinary patient, said method comprising the step of administering to the patient a therapeutically effective amount of a compound having the formula:



**Formula 1**

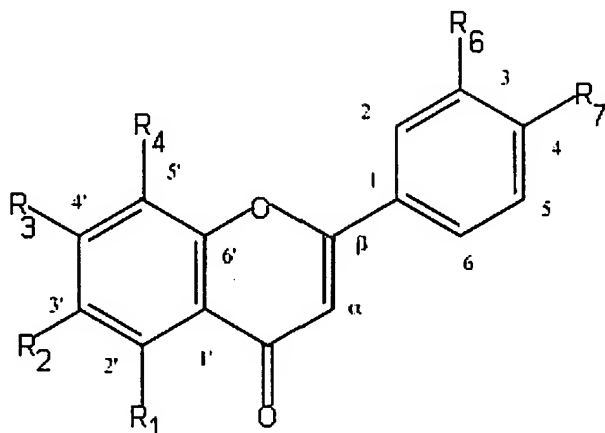
wherein;

R<sub>1</sub>, R<sub>3</sub>, R<sub>5</sub>, R<sub>6</sub> and R<sub>7</sub> are selected from H, OH, O-Alkyl, O-Alkenyl, O-Acyl; O-Glucosyl, O-Sulphate, )-Glucoronate and O-Amino Acid, halogen, amino, substituted amino and oxygen atom;

R<sub>2</sub> and R<sub>4</sub> are selected from H, alkyl and alkenyl, wherein the said alkyl and alkenyl groups have from 1 to 10 carbon atoms and up to 4 double bonds; and

the hydrogen on the α-carbon of the olefinic double bond may or may not be substituted with a methyl, phenyl or substituted phenyl group.

2. A method according to Claim 1, where  $R_5$  is an oxygen atom that is connect to the  $\beta$ -carbon atom of the olefinic double bond to form a compound having the formula:



**Formula 2**

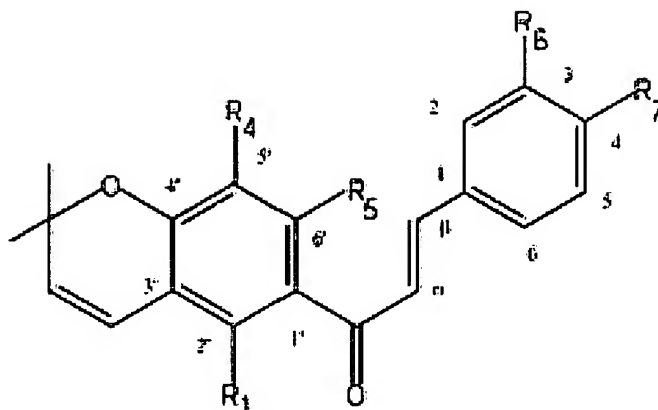
wherein;

$R_1$ ,  $R_3$ ,  $R_6$  and  $R_7$  are selected from H, OH, O-Alkyl, O-Alkenyl, O-Acyl; O-Glucosyl, O-Sulphate, )-Glucoronate and O-Amino Acid, halogen, amino, substituted amino and oxygen atom;

$R_2$  and  $R_4$  are selected from H, alkyl and alkenyl, wherein the said alkyl and alkenyl groups have from 1 to 10 carbon atoms and up to 4 double bonds; and

the hydrogen on the  $\alpha$ -carbon of the olefinic double bond may or may not be substituted with a methyl, phenyl or substituted phenyl group.

3. A method according to Claim 1, where  $R_2$  is prenyl or other alkenyl and  $R_3$  is OH, wherein  $R_2$  and  $R_3$  are combined to form a cyclic ring structure and a compound having the formula :



**Formula 3A**

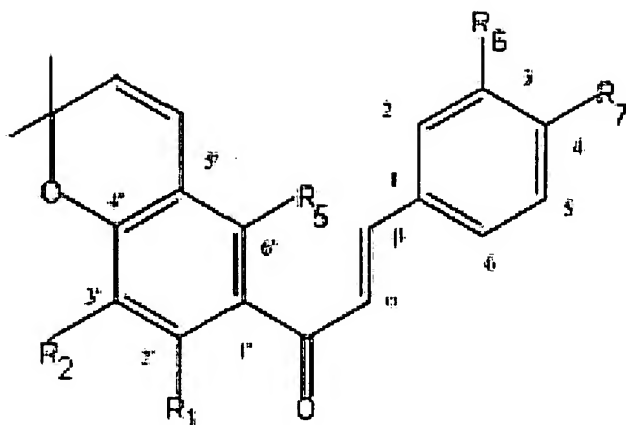
wherein;

$R_1$ ,  $R_5$ ,  $R_6$  and  $R_7$  are selected from H, OH, O-Alkyl, O-Alkenyl, O-Acyl; O-Glucosyl, O-Sulphate,  $\beta$ -Glucuronate and O-Amino Acid, halogen, amino, substituted amino and oxygen atom;

$R_4$  is selected from H, alkyl and alkenyl, wherein the said alkyl and alkenyl groups have from 1 to 10 carbon atoms and up to 4 double bonds; and

the hydrogen on the  $\alpha$ -carbon of the olefinic double bond may or may not be substituted with a methyl, phenyl or substituted phenyl group.

4. A method according to Claim 1, wherein  $R_4$  is prenyl or other alkyl,  $R_3$  is OH and said  $R_3$  and  $R_4$  are combined to form a cyclic ring structure and a compound of the formula:



**Formula 3B**

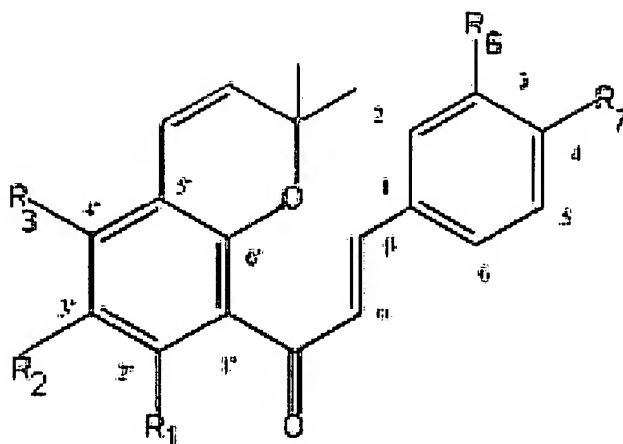
wherein;

$R_1$ ,  $R_5$ ,  $R_6$  and  $R_7$  are selected from H, OH, O-Alkyl, O-Alkenyl, O-Acyl; O-Glucosyl, O-Sulphate,  $\beta$ -Glucuronate and O-Amino Acid, halogen, amino, substituted amino and oxygen atom;

$R_2$  is selected from H, alkyl and alkenyl, wherein the said alkyl and alkenyl groups have from 1 to 10 carbon atoms and up to 4 double bonds; and

the hydrogen on the  $\alpha$ -carbon of the olefinic double bond may or may not be substituted with a methyl, phenyl or substituted phenyl group.

5. A method according to Claim 1 wherein  $R_4$  is prenyl or other alkyl,  $R_5$  is OH and are combined to form a cyclic ring and a compound having the formula:



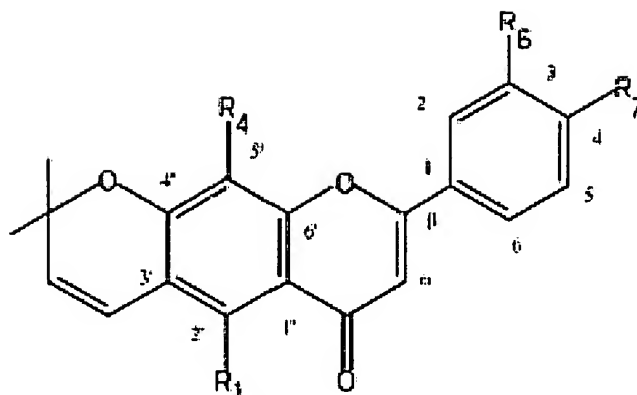
**Formula 3C**

R<sub>1</sub>, R<sub>3</sub>, R<sub>6</sub> and R<sub>7</sub> are selected from H, OH, O-Alkyl, O-Alkenyl, O-Acyl; O-Glucosyl, O-Sulphate, )-Glucoronate and O-Amino Acid, halogen, amino, substituted amino and oxygen atom;

R<sub>2</sub> is selected from H, alkyl and alkenyl, wherein the said alkyl and alkenyl groups have from 1 to 10 carbon atoms and up to 4 double bonds; and

the hydrogen on the  $\alpha$ -carbon of the olefinic double bond may or may not be substituted with a methyl, phenyl or substituted phenyl group.

6. A method according to Claim 1, where R<sub>2</sub> is prenyl or other alkenyl, R<sub>3</sub> is OH and R<sub>2</sub> and R<sub>3</sub> combine to form a cyclic ring and a compound of formula:



**Formula 4A**

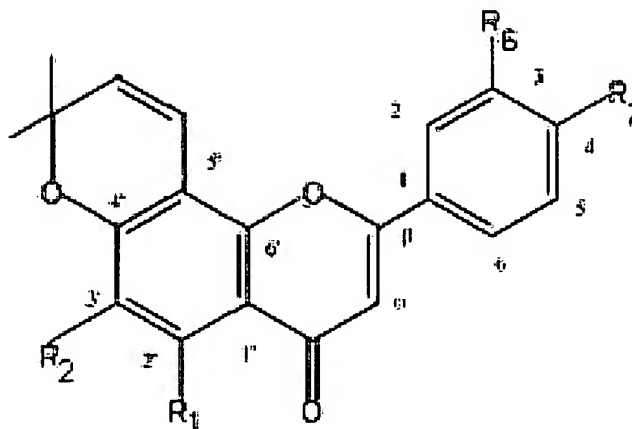
wherein;

R<sub>1</sub>, R<sub>6</sub> and R<sub>7</sub> are selected from H, OH, O-Alkyl, O-Alkenyl, O-Acyl; O-Glucosyl, O-Sulphate, )-Glucoronate and O-Amino Acid, halogen, amino, substituted amino and oxygen atom;

R<sub>4</sub> is selected from H, alkyl and alkenyl, wherein the said alkyl and alkenyl groups have from 1 to 10 carbon atoms and up to 4 double bonds; and

the hydrogen on the  $\alpha$ -carbon of the olefinic double bond may or may not be substituted with a methyl, phenyl or substituted phenyl group.

7. A method According to Claim 1 wherein R<sub>4</sub> is prenyl or other alkenyl, R<sub>3</sub> is OH and wherein R<sub>3</sub> and R<sub>4</sub> are combined to form a cyclic ring structure and a compound having the formula:



**Formula 4B**

wherein;

R<sub>1</sub>, R<sub>6</sub> and R<sub>7</sub> are selected from H, OH, O-Alkyl, O-Alkenyl, O-Acyl; O-Glucosyl, O-Sulphate, )-Glucoronate and O-Amino Acid, halogen, amino, substituted amino and oxygen atom;

R<sub>2</sub> is selected from H, alkyl and alkenyl, wherein the said alkyl and alkenyl groups have from 1 to 10 carbon atoms and up to 4 double bonds; and

the hydrogen on the  $\alpha$ -carbon of the olefinic double bond may or may not be substituted with a methyl, phenyl or substituted phenyl group.

8. A method according to Claim 1, wherein the compound is 4'-hydroxy-4,2',6'-trimethoxychalcone.

9. A method according to Claim 1, wherein the compound is 2'-hydroxy-4,4',6'-trimethoxychalcone (Flavokawain A).

10. A method according to Claim 1, wherein the compound is 2'-4-dihydroxy-4',6'-dimethoxychalcone (Flavokawain C).

- 1 11. A method according to Claim 1, wherein the compound is 2',4,6'-trihydroxy-4-  
2 methoxy-3'-prenylchalcone (Xanthogalenol).
- 1 12. A method according to Claim 1, wherein the compound is 2',6',4-trimethoxy-4'-  
2 hydroxy-3'-prenylchalcone.
- 1 13. A method according to Claim 2, wherein where the compound is luteolin.
- 1 14. A method according to Claim 2, wherein the compound is apigenin.
- 1 15. A method according to Claim 3, wherein the compound is 2',6'-dimethoxy-4-  
2 hydroxy-3',4'-dehydrocyclohexanochalcone.
- 1 16. A method according to Claim 4, wherein the compound is 2',6'dimethoxy-4-  
2 hydroxy-4',5'-dehydrocyclohexanochalcone.
- 1 17. A method according to Claim 5, wherein the compound is 2',4-dimethoxy-4'-  
2 hydroxy-5',6'-dehydrocyclohexanochalcone.
- 1 18. A method according to Claim 6, wherein the compound is 5,4'-dihydroxy-6,7-  
2 dehydrocyclohexanoflavone.
- 1 19. A method according to Claim 7, wherein the compound is 5-hydroxy-4'-hydroxy-  
2 7,8- dehydrocyclohexanoflavone 4'-glucoside.
- 1 20. A method according to claim 1 wherein the compound is administered orally.
- 1 21. A method according to Claim 1, wherein the compound is administered  
2 intravesically.